Nathan Louie

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First-Generation | US Citizen | Third-Year

EDUCATION

University of Washington - Paul G. Allen School of CSE **3.94** Seattle, WA
Bachelor of Science in Computer Science; Data Science option *Sept. 2021 - June 2024*

Bachelor of Science in Mathematics

EXPERIENCE

Junior Content Developer Aug. 2021 - Sept. 2021
Red Lens Games & Mojang Studios *Seattle, WA*

- Designed and implemented modifications packs using JSON with assistance from professionals in the company.
- Led and directed a team of high-schoolers to brainstorm, implement, and present their own custom packages.

Self-Organized Unofficial Independent Reading Groups Dec. 2022 - Present
University of Washington *Seattle, WA*

- Participated in a two quarter-long reading group on "Algebra: Chapter 0" and "Abstract Algebra," covering graduate algebra including category theory, group theory, ring theory, and Galois theory.
- Organized and participated in a quarter-long reading group on "Real Analysis Modern Techniques and Their Application," covering graduate real analysis including measure theory, differentiation, integration, and basic functional analysis. Completed exercises from the book with mentorship from a graduate student.
- Plan to participate in a two quarter-long reading group on "Algebraic Topology" by Hatcher, covering second-year graduate algebraic topology with mentorship from a graduate student.

Washington Directed Reading Program Sept. 2022 - Present
University of Washington *Seattle, WA*

- Participated in a quarter-long reading group on "Introduction To Topological Manifolds," covering graduate homotopy theory, such as the Seifert-Van Kampen Theorem.

Algebra Mentorship Jan. 2023 - Present
University of Washington *Seattle, WA*

- Currently co-leading and mentoring a group of accelerated undergraduate students on abstract algebra to prepare them for graduate courses.

Undegraduate Journal Peer Reviewer Jan. 2023 - Present
University of Washington *Seattle, WA*

- Currently peer reviewing papers submitted to the Washington Undergraduate Mathematics Journal.

Undegraduate Researcher June 2023 - Aug. 2023
Northwestern University *Evanston, IL*

- Participated in a REU on dynamical systems under Professor Aaron Brown. We constructed an Anosov surface group actions on the 3-torus and other nilmanifolds, and explored properties surrounding it.

TECHNICAL SKILLS

Languages: Java, Python, C/C++, SQL, LaTex, Mathematica, Sage, GAP
Frameworks: React, Node.js, JUnit
Developer Tools: Git, VS Code, Visual Studio, IntelliJ, Eclipse
Libraries: pandas, NumPy, Matplotlib

OUTREACH

2023 Math Hour Olympiad Judge